

PATENT  
YOR19990198US1 IBM-151

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	McFeely, et al.
Serial Number	:	09/378,502
Filing Date	:	August 20, 1999
Examiner	:	Bret P. Chen
Group Art Unit	:	1762
For	:	IMPROVED DELIVERY SYSTEM FOR GASES VIA THE SUBLIMATION OF PRECURSORS

RECEIVED  
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CUSTOMER SERVICE  
PUBLISHING DIVISION

TO: The Honorable Commissioner of Patents  
and Trademarks  
Post Office Box 1450  
Alexandria, VA 22313-1450  
Attention: Ms Lewis

**PETITION PURSUANT TO 37 CFR 1.181 TO WITHDRAW HOLDING OF  
ABANDONMENT**

Sir:

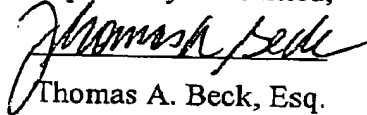
A *Notice of Allowance and Fee(s) Due* dated May 6, 2002 (Exhibit 1) was issued with respect to the above-identified application. The Examiner contacted Applicant's attorney on May 8, 2002 to advise counsel that an Abstract of the Disclosure was not found in the case. Counsel submitted the Abstract on May 8, 2002 (Cover Sheet Exhibit 2; Abstract Exhibit 3) and the Examiner sent a *Supplemental Notice of Allowability* dated May 9, 2002 (Exhibit 4). The Notices sent to Applicant both indicated that corrected drawings must be submitted.

On July 29, 2002, Applicants submitted a completed PTOL Form 85, (Exhibit 5) an Amendment pursuant to 37 CFR 1.313 to correct the specification (Exhibit 6) and a set of corrected drawings with cover page (Exhibit 7). The fax receipts for these documents are included as Exhibits 8. In response to these submissions, the USPTO sent a *Notice to File Corrected Application Papers* dated August 13, 2002, which stated: "Please Send in New Declaration With 1<sup>st</sup> Inventors Mailing Address" (Exhibit 9).

The inventor in question was not available immediately after receipt of the notice designated as Exhibit 9. Applicants' attorney did finally reach him and obtained the correct information which was included in the declaration. This document with corrected declaration was mailed to the USPTO on September 13, 2002 (Exhibit 10). The postcard receipt is enclosed herewith (Exhibit 11). On February 4, 2003, the USPTO sent a *Notice of Abandonment* (Exhibit 12) stating that "1" Applicant missing mailing address on oath." The revised declaration was in fact sent timely to the USPTO as confirmed by Exhibit 11.

Applicants' attorney did inquire about this matter in February 2003 but no response was ever received. In view of the fact that the response sending the fully completed declaration was transmitted and received by the USPTO, withdrawal of the holding of abandonment is respectfully requested.

Respectfully Submitted,



Thomas A. Beck, Esq.

Reg. No. 20,816

26 Rockledge Lane

New Milford, CT 06776

(860) 354-0892

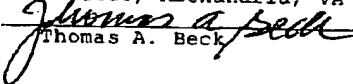
(860) 210-0700 fax

e-mail tombeck.atty@Mindspring.com

I hereby certify that this supplemental paper is being telefaxed on the date indicated below in care of Ms Lewis at (703) 308-5065 and addressed to the Commissioner of Patents & Trademarks, Post Office Box 1450, Alexandria, VA 22313-1450.

Signature:

Name:

  
Thomas A. Beck

Date: October 19, 2004



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

## NOTICE OF ALLOWANCE AND FEE(S) DUE

7590 05/06/2002  
CASEY AUGUST  
INTELLECTUAL PROPERTY GROUP  
INTERNATIONAL BUSINESS MACHINES CORP  
P O BOX 218  
YORKTOWN HEIGHTS, NY 10598

EXAMINER

CHEN, BRET P

ART UNIT

CLASS-SUBCLASS

1762

427-248100

DATE MAILED: 05/06/2002

drawings due

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/378,502	08/20/1999	F. READ MCFEELY	YO999-198	9212

TITLE OF INVENTION: DELIVERY SYSTEMS FOR GASES FOR GASES VIA THE SUBLIMATION OF SOLID PRECURSORS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1280	\$300	\$1580	08/06/2002

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

## HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above. If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is changed, pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above and notify the United States Patent and Trademark Office of the change in status, or  
B. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check the box below and enclose the PUBLICATION FEE and 1/2 the ISSUE FEE shown above.

☐ Applicant claims SMALL ENTITY status.  
See 37 CFR 1.27.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

IBM  
YORKTOWN  
08/02/02 10 AM 9:50  
INTELLECTUAL PROPERTY  
LAW DEPT.



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D. C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/378,502	08/20/1999	F. READ MCFEELY	YO999-198	9212

7590

05/06/2002

CASEY AUGUST  
INTELLECTUAL PROPERTY GROUP  
INTERNATIONAL BUSINESS MACHINES CORP  
P O BOX 218  
YORKTOWN HEIGHTS, NY 10598

EXAMINER

CHEN, BRET P

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 05/06/2002

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**  
(application filed on or after May 29, 2000)

The patent term adjustment to date is 0 days. If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the term adjustment will be 0 days.

If a continued prosecution application (CPA) was filed in the above-identified application, the filing date that determines patent term adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) system. (<http://pair.uspto.gov>)

**Notice of Allowability**Application No.  
09/378,502Applicant(s)  
Fenton Read McFeely et al.Examiner  
Bret ChenArt Unit  
1762**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment after final dated 4/24/02
2. ☒ The allowed claim(s) is/are 1-16
3. ☐ The drawings filed on \_\_\_\_\_ are acceptable as formal drawings.
4. ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).  
 a) ☐ All    b) ☐ Some\*    c) ☐ None of the:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_  
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).  
 \*Certified copies not received: \_\_\_\_\_

5. ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

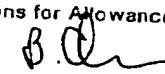
6. ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
7. ☒ Applicant MUST submit NEW FORMAL DRAWINGS  
 (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  
 1) ☐ hereto or 2) ☒ to Paper No. 9  
 (b) ☒ including changes required by the proposed drawing correction filed Apr 25, 2002, which has been approved by the examiner.  
 (c) ☐ including changes required by the attached Examiner's Amendment/Comment or in the Office action of Paper No. \_\_\_\_\_

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

8. ☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL. Any reply to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

**Attachment(s)**

- 1 ☐ Notice of References Cited (PTO-892)  
 3 ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 5 ☐ Information Disclosure Statement(s) (PTO-1449), Paper No.(s). \_\_\_\_\_  
 7 ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material  
 9 ☐ Other
- 2 ☐ Notice of Informal Patent Application (PTO-152)  
 4 ☐ Interview Summary (PTO-413), Paper No. \_\_\_\_\_  
 6 ☐ Examiner's Amendment/Comment  
 8 ☐ Examiner's Statement of Reasons for Allowance

  
 BRET CHEN  
 PRIMARY EXAMINER  
 ART UNIT 1762

THOMAS A. BECK  
ATTORNEY AND COUNSELLOR AT LAW  
26 ROCKLEDGE LANE  
NEW MILFORD, CT 06776  
(860) 354-0892  
(860) 210-0700 Fax  
E-mail: tombeck.atty @ Mindspring.com

**FACSIMILE SUMMARY SHEET**

DATE: May 8, 2002

TIME: 1500 hrs

TO: Examiner Bret P. Chen

USPTO Group Art Unit 1762

FAX NO.: (703) 892-9485

FROM: THOMAS A. BECK, ESQ.

YOUR REF.: \_\_\_\_\_

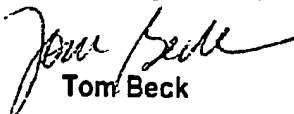
MY REF.: IBM151

ORIGINAL TO BE SENT BY MAIL: YES \_\_\_\_\_ NO X

TOTAL NUMBER OF PAGES (INCLUDING COVER SHEET) 15

IF YOU DO NOT RECEIVE ALL THE PAGES CALL ME IMMEDIATELY AT THE  
NUMBER LISTED ABOVE.

**MESSAGE:** Mr. Chen: Enclosed is the signed amendment and Abstract of the Disclosure that we  
discussed earlier this afternoon. If you need anything further, let me know.

  
Tom Beck

NOTICE

This facsimile message may contain ATTORNEY PRIVILEGED AND CONFIDENTIAL INFORMATION intended only  
for the use of the above-named individual or entity. If the reader of this message is not the  
intended recipient, any dissemination, distribution or copying of this communication is strictly  
prohibited. If you have received this communication in error, please immediately notify me by  
telephone and return the original message to the address listed above via the U.S. postal  
service.

EXHIBIT 2



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/378,502	08/20/1999	F. READ MCFEELY	YO999-198	9212

7590

05/09/2002

*mu* CASEY AUGUST  
INTELLECTUAL PROPERTY GROUP  
INTERNATIONAL BUSINESS MACHINES CORP  
P O BOX 218  
YORKTOWN HEIGHTS, NY 10598

EXAMINER

CHEN, BRET P

ART UNIT

PAPER NUMBER

1762

16

DATE MAILED: 05/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

IBM  
YORKTOWN  
2002 MAY 14 AM 9:19  
INTELLECTUAL PROPERTY  
LAW DEPT.

EXHIBIT 4

09/378,502

### **ABSTRACT OF THE DISCLOSURE**

A method of depositing a metal or other desired material onto a substrate using a gas generated via the sublimation of solid material precursors, wherein a solid precursor is introduced into a liquid in a bubbler apparatus so that the bubbler then contains vapors of solid precursor, and then sweeping a carrier gas through the bubbler to a reactor containing a substrate which is coated with the precursor via chemical vapor deposition.

**EXHIBIT 3**



# SUPPLEMENTAL Notice of Allowability

Application No.  
09/378,502Applicant(s)  
Fenton Read McFeely et al.Examiner  
Bret ChenArt Unit  
1762

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_\_.
  2. ☒ The allowed claim(s) is/are 1-16
  3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
  4. ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
    - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \*Certified copies not received: \_\_\_\_\_

5. ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☒ CORRECTED DRAWINGS must be submitted.
  - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto    or    2) ☒ to Paper No. 9
  - (b) ☒ including changes required by the proposed drawing correction filed Apr 25, 2002, which has been approved by the examiner.
  - (c) ☐ including changes required by the attached Examiner's Amendment/Comment or in the Office action of Paper No. \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the top margin (not the back) of each sheet. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

- |  |  |
|--|--|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892)  | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                    | 4 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____    |
| 5 <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449), Paper No(s). _____          | 6 <input checked="" type="checkbox"/> Examiner's Amendment/Comment         |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
| 9 <input type="checkbox"/> Other   |  |

Application/Control Number: 09/378502

Page 2

Art Unit: 1762

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Thomas Beck on May 7, 2002.

2. The application has been amended as follows:

In the Abstract:


Please add the following abstract enclosed on the separate page.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bret Chen whose telephone number is (703) 308-3809. The examiner can normally be reached on Monday through Thursday from 6:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck, can be reached on (703) 308-2333. The fax phone number for this Group is (703) 872-9310. Amendment After Finals should be faxed to (703) 872-9311.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

bc  
May 8, 2002

  
BRET CHEN  
PRIMARY EXAMINER

May 08 02 01:55p

Dr Constance Beck

860 210-0702

p. 15

09/378,502

#### ABSTRACT OF THE DISCLOSURE

A method of depositing a metal or other desired material onto a substrate using a gas generated via the sublimation of solid material precursors, wherein a solid precursor is introduced into a liquid in a bubbler apparatus so that the bubbler then contains vapors of solid precursor, and then sweeping a carrier gas through the bubbler to a reactor containing a substrate which is coated with the precursor via chemical vapor deposition.

## PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** Box ISSUE FEE  
**Commissioner for Patents**  
**Washington, D.C. 20231**  
**Fax** (703)746-4000

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 4 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Legibly mark-up with any corrections or use Block 1)  
 7590 05/06/2002

CASEY AUGUST  
 INTELLECTUAL PROPERTY GROUP  
 INTERNATIONAL BUSINESS MACHINES CORP  
 P O BOX 218  
 YORKTOWN HEIGHTS, NY 10598

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

## Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Box Issue Fee address above, or being facsimile transmitted to the USPTO, on the date indicated below.

THOMAS A. BECK (Depositor's name)  
 Thomas A. Beck (Signature)  
 July 29, 2002 (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/378,502	08/20/1999	F. READ MCFEELY	YO999-198	9212

TITLE OF INVENTION: DELIVERY SYSTEMS FOR GASES FOR GASES VIA THE SUBLIMATION OF SOLID PRECURSORS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1280	\$300	\$1580	08/06/2002

EXAMINER	ART UNIT	CLASS-SUBCLASS
CHEN, BRET P	1762	427-248100

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1. THOMAS A. BECK  
 2. MARIAN UNDERWEISER  
 3.

## 3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the USPTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

INTERNATIONAL BUSINESS MACHINES CORPORATION

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

ARMONK, NY USA

Please check the appropriate assignee category or categories (will not be printed on the patent)

☐ individual ☒ corporation or other private group entity ☐ government

4a. The following fee(s) are enclosed:

- ☒ Issue Fee  
☐ Publication Fee  
☐ Advance Order - # of Copies

4b. Payment of Fee(s):

- ☐ A check in the amount of the fee(s) is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☒ The Commissioner is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number 05-0510 (enclose an extra copy of this form).

Commissioner for Patents is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.

(Authorized Signature)

(Date)

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

EXHIBIT 5

TRANSMIT THIS FORM WITH FEE(S)

PATENT  
YO999-198 IBM-151

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of	:	McFeely, et al.
Serial Number	:	09/378,502
Filing Date	:	August 20, 1999
Examiner	:	Bret P. Chen
Group Art Unit	:	1762
For	:	IMPROVED DELIVERY SYSTEM FOR GASES VIA THE SUBLIMATION OF PRECURSORS

TO: The Honorable Commissioner of Patents  
and Trademarks  
Washington, D.C. 20231

**AMENDMENT PURSUANT TO 37 CFR 1.312**

Sir:

In response to the Official Notice of Allowance dated May 6, 2002, please consider the following remarks in support of this amendment.

IN THE DRAWINGS: Withdraw the drawing submitted March 27, 2002 with the legend "PRIOR ART" contained thereon and insert the original formal drawing submitted in this case, a copy of which is enclosed herewith.

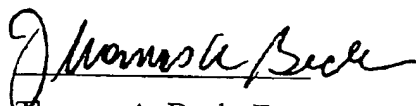
**EXHIBIT 6**

**REMARKS**

As noted above, Applicants submit herewith a correct copy of Figure 1 which corresponds to the drawing as originally filed.

The Examiner and Applicants' attorney discussed recently by telephone an inconsistency in the specification wherein Figure 1 was cited as being prior art and also as an embodiment used in the method of the present invention. Applicants file this Rule 312 amendment to eliminate the inconsistency. All reference to Figure 1 of the drawing referring to it as prior art has been deleted. The explanation of the operation of the bubbler depicted in Figure 1 has been inserted on page 7 of the specification. The same language that was deleted from pages 1 and 2 of the specification has been inserted at page 7. Accordingly, there is no new matter included in this amendment. Entry of this amendment is respectfully solicited.

Respectfully Submitted,



Thomas A. Beck, Esq.  
Reg. No. 20,816  
26 Rockledge Lane  
New Milford, CT 06776  
(860) 354-0892  
(860) 210-0700 fax  
e-mail tombeck.atty@Mindspring.com

I hereby certify that this paper is being telefaxed to Mr. Bret Chen at (703) ~~305-5408~~ <sup>812-9311</sup> on the date indicated below addressed to Commissioner of Patents & Trademarks, Washington, D.C. 20231

Signature:  
Name:

  
Thomas A. Beck, Esq

Date: July 29, 2002

**APPENDIX A**  
**"CLEAN" VERSION OF EACH PARAGRAPH/SECTION/CLAIM**  
**37 C.F.R. § 1.121(b)(ii) AND (c)(i)**

**SPECIFICATION:**

Clean copy replacements for page numbers 1, 2 and 7 attached hereto.

YO999-198 IBM-151

**IMPROVED DELIVERY SYSTEM FOR GASES GENERATED VIA THE SUBLIMATION OF SOLID  
PRECURSORS**

**BACKGROUND OF THE INVENTION**

**1. Field of the Invention**

The present invention relates to a method for improving the delivery system for gases generated from the sublimation of low vapor pressure solids. More particularly, the invention uses an ultra-low vapor pressure liquid, in which the solid is insoluble, as a carrier for particles, the vapor emanating from which is used to form the overlayer in a chemical vapor deposition.

**2. Brief Description of the Prior Art**

For chemical vapor deposition (CVD), it is necessary to transport a stream of gaseous precursor molecules from a source container into a reactor at sufficient rate to allow for conveniently rapid film growth.

If the precursor is a gas at room temperature, or may be packaged as a liquid under greater than atmospheric pressure, this creates no problem. Normal gas handling equipment, pressure regulators, flow metering valves and the like suffice.

For materials which are liquids, two situations arise. If the vapor pressure is sufficiently high, the vapor itself may be treated analogously to the methods used for compressed gases. For materials which are liquids with lower vapor pressure, handling is generally more complicated, but it has become a matter of standard practice.



For solid state precursors, the situation is more complicated still. As is the case with liquid precursors, if the solid state precursor is sufficiently volatile, no problem arises; the vapor may be handled and delivered via standard gas handling techniques. However this situation is infrequent. Solids generally have a lower vapor pressure than liquids. For these low volatility precursors, the delivery system and source material itself must be optimized for maximum delivery rate. For the source material, this means using as finely divided a powder as possible, since the delivery of source material to the vapor phase is the product of the specific sublimation rate and the total surface area of the source material.

In addition to delivering the precursor to the reactor at an adequate rate, it is also highly desirable that the delivery system exhibit long term stability. That is, under the same operating conditions, it should supply the same flux of precursor molecules for weeks or months on end. Otherwise, costly and time consuming recalibrations of the deposition process would frequently be necessary. This problem is virtually non-existent for liquid and gaseous precursors, but is especially difficult to circumvent with solid precursors. This is because of the problem of recrystallization. To maximize material delivery, the source is introduced as a fine powder. When the delivery system is not in use, it is valved off, and the source material establishes its equilibrium vapor pressure within the vessel within which it is contained. This solid-gas equilibrium is a dynamic one, in which molecules are continuously being evaporated from and condensed upon each particle. Thus, the individual particles can easily exchange molecules via the gas phase. Thermodynamically, the Gibbs free energy of the solid phase is minimized when the total surface area is minimized. Thus, large crystallites will grow at the expense of small crystallites. The net effect is that the available surface area per unit mass of precursor will decrease over time rendering the delivery rate of the precursor to the reactor non-constant and declining.

## SUMMARY OF THE INVENTION

Generally, method of the present invention is an improved delivery system for gases generated via the sublimation of solid material precursors. The instant method uses a bubbler of the type depicted in Fig. 1. This arrangement consists of a partially filled vessel, with two valved outlets. The inlet tube extending into the liquid is connected to a compressed gas tank via appropriate pressure regulation and flow rate control devices. Opening the inlet and outlet valves causes a gas (the carrier gas) to bubble into the liquid via the inlet tube, and physically sweep the source gas vapor into the outlet tube and subsequently to the reactor. The delivery rate of the precursor gas may thus be regulated by the flow rate of the carrier gas. The method of the present invention comprises: first, introducing a solid precursor into [a] the liquid bubbler apparatus; adding a liquid to the solid precursor; containing bubbler apparatus; the liquid in question is chosen to have a vapor pressure which is negligible compared with the vapor pressure of the solid precursor under the operating conditions extant in the bubbler. The liquid is also chosen such that the solid precursor exhibits limited solubility in said liquid, said solubility being less than about 100 ppm; attaching said bubbler containing said solid precursor and said liquid to reactor apparatus containing a substrate to which the precursor is to be applied. The bubbler contains vapors of solid precursor.

A carrier gas is passed through the bubbler to sweep said mixture of vapors of the carrier gas and solid precursor into said reactor to coat said substrate. The carrier gas may be inert or reactive.

More specifically, the method of the present invention is used in conjunction with a procedure which is embodied within a method of depositing a metal or other desired material onto a suitable substrate. The novel method consists of the (1) introduction of a suitable substrate into a CVD or other deposition chamber; (2) bringing the substrate to the appropriate deposition temperature; and (3) flowing over it a gaseous mixture comprising a precursor molecule or molecules in a carrier gas, which may or may not be reactive with the precursor; (4) allowing deposition to take place to the desired degree; (5) shutting off the flow of precursor vapor and evacuating the chamber, and finally (6) cooling and removing the processed substrate.

**APPENDIX B**  
**VERSION WITH MARKINGS TO SHOW CHANGES MADE**  
**37 C.F.R. § 1.121(b)(iii) AND (c)(ii)**

**SPECIFICATION:**

Attached are marked up page numbers: 1,2 and 7.

YO999-198 IBM-151

**IMPROVED DELIVERY SYSTEM FOR GASES GENERATED VIA THE SUBLIMATION OF SOLID  
PRECURSORS**

**BACKGROUND OF THE INVENTION**

**1. Field of the Invention**

The present invention relates to a method for improving the delivery system for gases generated from the sublimation of low vapor pressure solids. More particularly, the invention uses an ultra-low vapor pressure liquid, in which the solid is insoluble, as a carrier for particles, the vapor emanating from which is used to form the overlayer in a chemical vapor deposition.

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If the precursor is a gas at room temperature, or may be packaged as a liquid under greater than atmospheric pressure, this creates no problem. Normal gas handling equipment, pressure regulators, flow metering valves and the like suffice.

For materials which are liquids, two situations arise. If the vapor pressure is sufficiently high, the vapor itself may be treated analogously to the methods used for compressed gases. For materials which are liquids with lower vapor pressure, handling is generally more complicated, but it has become a matter of standard practice. [One method is to use the bubbler depicted in Fig. 1. This arrangement consists of a partially filled vessel, with two valved outlets. The inlet tube extending into the liquid is connected to a compressed gas tank via appropriate pressure regulation and flow rate control devices.]

[Opening the inlet and outlet valves causes a gas (the carrier gas) to bubble into the liquid via the inlet tube, and physically sweep the source gas vapor into the outlet tube and subsequently to the reactor. The delivery rate of the precursor gas may thus be regulated by the flow rate of the carrier gas.]

For solid state precursors, the situation is more complicated still. As is the case with liquid precursors, if the solid state precursor is sufficiently volatile, no problem arises; the vapor may be handled and delivered via standard gas handling techniques. However this situation is infrequent. Solids generally have a lower vapor pressure than liquids. For these low volatility precursors, the delivery system and source material itself must be optimized for maximum delivery rate. For the source material, this means using as finely divided a powder as possible, since the delivery of source material to the vapor phase is the product of the specific sublimation rate and the total surface area of the source material.

In addition to delivering the precursor to the reactor at an adequate rate, it is also highly desirable that the delivery system exhibit long term stability. That is, under the same operating conditions, it should supply the same flux of precursor molecules for weeks or months on end. Otherwise, costly and time consuming recalibrations of the deposition process would frequently be necessary. This problem is virtually non-existent for liquid and gaseous precursors, but is especially difficult to circumvent with solid precursors. This is because of the problem of recrystallization. To maximize material delivery, the source is introduced as a fine powder. When the delivery system is not in use, it is valved off, and the source material establishes its equilibrium vapor pressure within the vessel within which it is contained. This solid-gas equilibrium is a dynamic one, in which molecules are continuously being evaporated from and condensed upon each particle. Thus, the individual particles can easily exchange molecules via the gas phase. Thermodynamically, the Gibbs free energy of the solid phase is minimized when the total surface area is minimized. Thus, large crystallites will grow at the expense of small crystallites. The net effect is that the available surface area per unit mass of precursor will decrease over time rendering the delivery rate of the precursor to the reactor non-constant and declining.

## SUMMARY OF THE INVENTION

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More specifically, the method of the present invention is used in conjunction with a procedure which is embodied within a method of depositing a metal or other desired material onto a suitable substrate. The novel method consists of the (1) introduction of a suitable substrate into a CVD or other deposition chamber; (2) bringing the substrate to the appropriate deposition temperature; and (3) flowing over it a gaseous mixture comprising a precursor molecule or molecules in a carrier gas, which may or may not be reactive with the precursor; (4) allowing deposition to take place to the desired degree[.]; (5) shutting off the flow of precursor vapor and evacuating the chamber, and finally (6) cooling and removing the processed substrate.

THOMAS A. BECK  
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**FACSIMILE SUMMARY SHEET**

DATE: July 29, 2002

TIME: 1340 hrs

TO: EXAMINER BRET P. CHEN PLEASE NOTIFY UPON RECEIPT  
GROUP ART 1762 872-9311

FAX NO.: (703) 360-5408

FROM: THOMAS A. BECK, ESQ.

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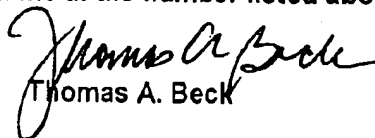
MY REF.: \_\_\_\_\_

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TOTAL NUMBER OF PAGES (INCLUDING COVER SHEET) 12 Drawing

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Thomas A. Beck

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EXHIBIT 7

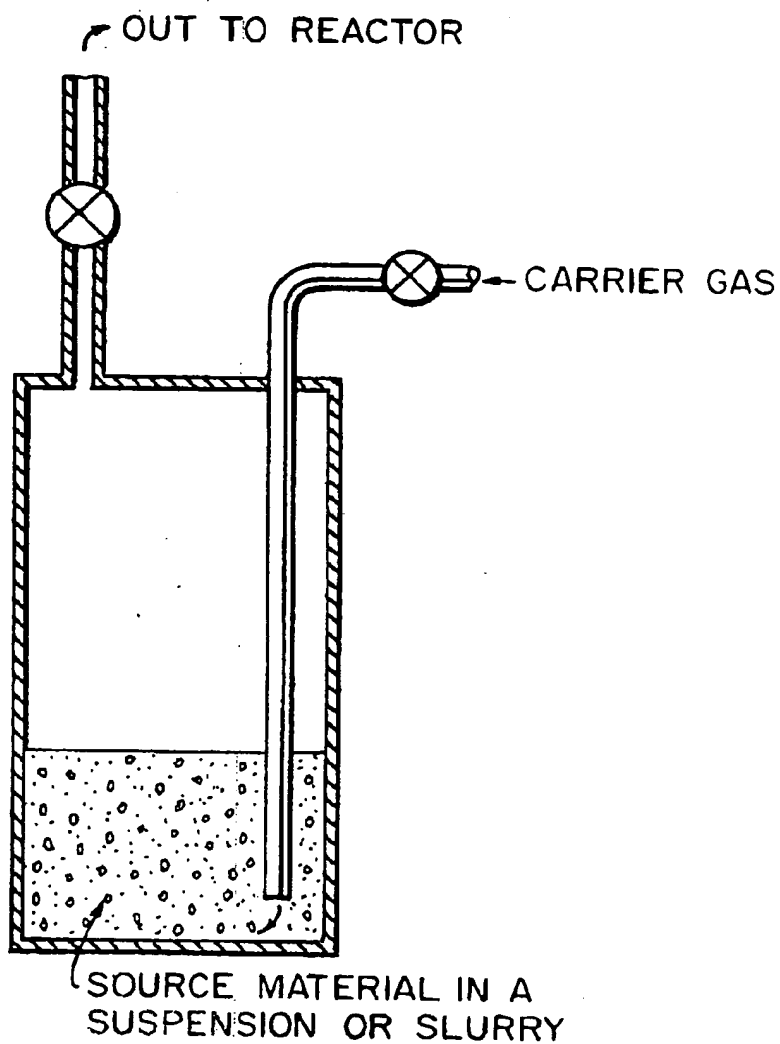


FIG. I



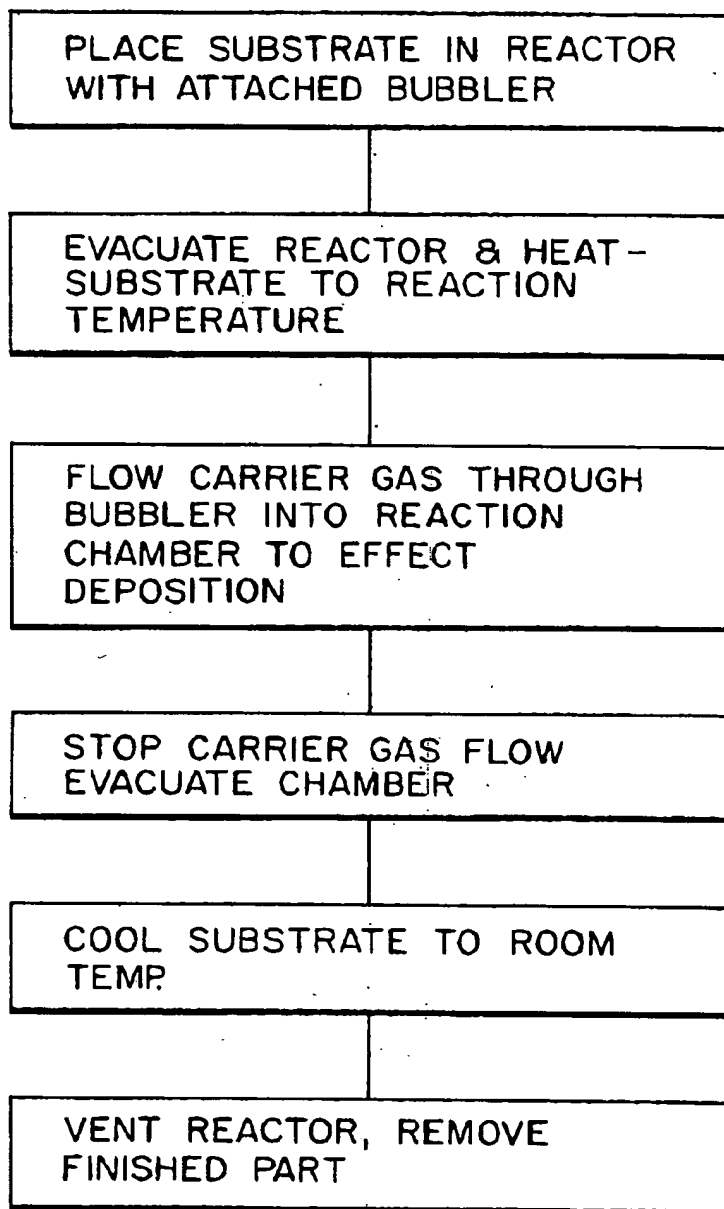


FIG.2

07/29/02 14:12:18

USPTO-&gt;

860 210 8702 RightFAX

Page 001

TO:Auto-reply fax to 860 210 0702 COMPANY:

## Auto-Reply Facsimile Transmission



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Received  
Cover  
Page

=====&gt;

Jul 29 02 12:48p	Dr. Constance Beck	860 210-0702	P.1
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THOMAS A. BECK  
ATTORNEY AND COUNSELOR AT LAW  
26 ROCKLEDGE LANE  
NEW MILFORD, CT 06776  
(860) 354-4892  
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E-mail: tombeck.ny@Mindspring.com

**FACSIMILE SUMMARY SHEET**

DATE: July 29, 2002      TIME: 1348    hrs

TO: EXAMINER BRIE P. CHEN      PLEASE NOTIFY UPON RECEIPT  
     GROUP ART 172      872-7311

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*Thomas A. Beck*  
Thomas A. Beck

NOTES

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07/29/02 15:59:25

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Page 001

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TO:

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Received  
Cover  
Page

=====&gt;

Jul 29 02 02:32p	Dr. Constance Beck	860 210-0702	P. 1
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**FACSIMILE SUMMARY SHEET**

DATE: July 29, 2002      TIME: 1348 hrs

TO: EXAMINER HET P. CHEN      PLEASE NOTIFY UPON RECEIPT  
     GROUP ART 1782      872-1311

FROM: THOMAS A. BECK, ESQ.      FAX NO.: (703) 260-6400

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MESSAGE: Mr Chen: This is the amendment to clear up the inconsistency in the specification that we discussed. If there are any problems call me at the number listed above. Thank you.

*Thomas A. Beck*  
Thomas A. Beck

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EXHIBIT 8



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UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. 20231  
www.uspto.gov

THB

mu

Y029-1999-0198

CASEY AUGUST  
INTELLECTUAL PROPERTY GROUP  
INTERNATIONAL BUSINESS MACHINES CORP  
P O BOX 218  
YORKTOWN HEIGHTS, NY 10598Serial No. : 09/378502  
Applicant : F READ  
Filing Date : 08/20/1999  
Date Mailed : 8/13/2002

Due 9/13/02

## NOTICE TO FILE CORRECTED APPLICATION PAPERS

*Notice of Allowance Mailed*

This application has been accorded an Allowance Date and is being prepared for issuance. The application, however, is incomplete for the reasons below.

Applicant is given 30 days from the mail date of this Notice within which to correct the informalities indicated below. A failure to reply will result in the application being ABANDONED. This period for reply is NOT extendable under 37 CFR 1.136 (a) or (b).

**PLEASE SEND IN NEW DECLARATION WITH 1<sup>ST</sup> INVENTORS  
MAILING INFORMATION.**

*A copy of this notice MUST be returned with the reply. Please address response to "Box Issue Fee".*

Name  
Data Query  
KIMELLA RODGERS, LIE

703 308 6789

EXHIBIT 9

IBM  
2002 AUG 20 AM 9:16  
LAW DEPT.

PATENT  
YO999-198 IBM-151

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	McFeely, et al.
Serial Number	:	09/378,502
Filing Date	:	August 20, 1999
Examiner	:	Bret P. Chen
Group Art Unit	:	1762
For	:	IMPROVED DELIVERY SYSTEM FOR GASES VIA THE SUBLIMATION OF PRECURSORS

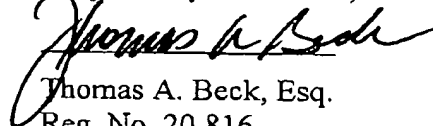
TO: The Honorable Commissioner of Patents  
and Trademarks  
Washington, D.C. 20231

AMENDMENT PURSUANT TO 37 CFR 1.312

Sir:

In response to the *Notice To File Corrected Application Papers* dated August 13, 2002, please accept the enclosed declaration containing the full address (mailing information) of Applicant McFeely.

Respectfully Submitted,

  
Thomas A. Beck, Esq.

Reg. No. 20,816

26 Rockledge Lane

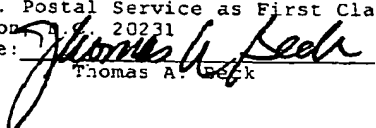
New Milford, CT 06776

(860) 354-0892

(860) 210-0700 fax

e-mail tombeck.atty@Mindspring.com

I hereby certify that this supplemental paper is being deposited on the date indicated below with the U.S. Postal Service as First Class Mail addressed to Commissioner of Patents & Trademarks, Washington, D.C. 20231

Signature: 

Name: Thomas A. Beck

Date: September 13, 2002

EXHIBIT 10

## DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION YO999-198

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

IMPROVED DELIVERY SYSTEM FOR GASES GENERATED VIA SUBLIMATION OF SOLID PRECURSORS

the specification of which (check one)

X is attached hereto.

\_\_\_\_\_ was filed on \_\_\_\_\_ as

Application Serial No. \_\_\_\_\_

and was amended on \_\_\_\_\_  
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s) None

Priority Claimed

_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	___ Yes ___ No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	___ Yes ___ No
_____ (Number)	_____ Country)	_____ (Day/Month/Year Filed)	___ Yes ___ No

I hereby claim the benefit under 35 U.S.C. §119(e) of any United States provisional application(s) listed below.

\_\_\_\_\_  
(Application Number) \_\_\_\_\_  
(Filing Date)

\_\_\_\_\_  
(Application Number) \_\_\_\_\_  
(Filing Date)

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States Application(s) listed below and, insofar as the subject matter of each of the claims of the application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose information material to the patentability of this application as defined in Title 37, Code of Federal Regulations, Section 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application;

_____ (Application Serial No.)	_____ (Filing Date)	_____ (Status) (patented, pending, abandoned)
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_____ (Application Serial No.)	_____ (Filing Date)	_____ (Status) (patented, pending, abandoned)
-----------------------------------	------------------------	--

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark

Office connected therewith (List name and registration number).

Manny W. Schechter (Reg. No. 31,722), Terry J. Ilardi (Reg. 29,936), Christopher A. Hughes (Reg. 26,914), Edward A. Pennington (Reg. 32,588), John E. Hoel (Reg. 26,279), Joseph C. Redmond, Jr. (Reg. 18,753), Kevin M. Jordan (Reg. 40,277), Stephen C. Kaufman (Reg. 29,551), Jay P. Sbrollini (Reg. 36,266), David M. Shofi (Reg. 39,835), Robert M. Trepp (Reg. 25,933), Louis P. Herzberg (Reg. 41,500), Douglas W. Cameron (Reg. 31,596), Paul Otterstedt (Reg. 37,411), Louis J. Percello (Reg. 33,206 and Daniel P. Morris (Reg. 32,053).

Send Correspondence to: Casey August, Intellectual Property Group, International Business Machines Corporation, PO Box 218, Yorktown Heights, NY 10598

Calls to: (name and telephone number) Casey August (914) 945-2133

INVENTORS

F. Read McFeely

Full name of sole or first inventor

8/13/99

Inventor's Signature

25 Donald Lane, Ossining, NY 10596

Date

Residence

USA

Citizenship

Same as above

Post Office Address

Deborah A. Neumayer

Full name of second joint-inventor, if any

Deborah A Neumayer8/13/99

Inventor's Signature

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Date

Residence

USA

Citizenship

Same as above

Post Office Address

John J. Yurkas

Full name of third joint-inventor, if any

John J Yurkas8/13/99

Inventor's signature

Date

94 Haig Avenue, Stamford, CT 06905

Residence

Citizenship

Same as above

Post Office Address

Full name of fourth joint-inventor, if any

Inventor's signature

Date

Residence

Citizenship

Post Office Address

Full name of fifth joint-inventor, if any



-----▽-----▽-----▽-----▽-----▽-----▽-----  
Inventor's signature

Date

Residence

Citizenship

Post Office Address

Docket IBM-151

---

IBM 151

Y0999-198

McFEELY ET AL  
DECLARATION w/ADDRESS OF  
McFEELY

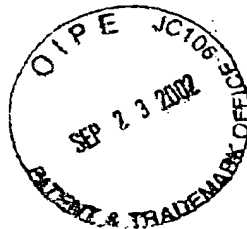


EXHIBIT 11

FEB 21 '03 16:36 FR

TO 91 2100702

P.01



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENT AND TRADEMARK  
WASHINGTON, D.C. 20531  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/378,502	08/20/1999	F. READ MCFEELY	YO999-198	9212

7590

02/04/2003

CASEY AUGUST  
INTELLECTUAL PROPERTY GROUP  
INTERNATIONAL BUSINESS MACHINES CORP  
P O BOX 218  
YORKTOWN HEIGHTS, NY 10598

EXAMINER

CHEN, BRIET

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 02/04/2003

18

Please find below and/or attached an Office communication concerning this application or proceeding.

1-860-210-0700  
M: pls fax to Tom Beck  
for handling -

2/15/03

860 210 0702

INTELLECTUAL PROPERTY  
LAW DEPT.

2003 FEB 10 AM 9:10

IBM  
YORKTOWN

FEB 21 '03 16:36 FR

TO 9102100702

P.02

**Notice of Abandonment**

Application No.

09/378502

Applicant(s)

Examiner

Art Unit

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

This application is abandoned in view of:

1. ☒ Applicant's failure to timely file a proper reply to the Office letter mailed on 8/13/02.
- (a) ☐ A reply was received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the period for reply (including a total extension of time of \_\_\_\_\_ month(s)) which expired on \_\_\_\_\_.
- (b) ☐ A proposed reply was received on \_\_\_\_\_, but it does not constitute a proper reply under 37 C.F.R. 1.113(a) to the final rejection.
- (A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114).
- (c) ☐ A reply was received on \_\_\_\_\_ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
- (d) ☒ No reply has been received.
2. ☐ Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
- (a) ☐ The issue fee and publication fee, if applicable, was received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
- (b) ☐ The submitted issue fee of \$ \_\_\_\_\_ is insufficient. A balance of \$ \_\_\_\_\_ is due.
- The issue fee required by 37 CFR 1.18 is \$ \_\_\_\_\_. The publication fee, if required by 37 CFR 1.18(d) is \$ \_\_\_\_.
- (c) ☐ The issue fee and publication fee, if applicable, has not been received.
3. ☐ Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
- (a) ☐ Proposed new formal drawings were received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the period for reply.
- (b) ☐ No corrected drawings have been received.
4. ☐ The letter of express abandonment which is signed by the attorney or agent of record, the assignee of the entire interest, or all of the applicants.
5. ☐ The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34(a)) upon the filing of a continuing application.
6. ☐ The decision by the Board of Patent Appeals and Interferences rendered on \_\_\_\_\_ and because the period for seeking court review of the decision has expired and there are no allowed claims.
7. ☒ The reason(s) below:  
1st applicant missing mailing address on oath

Petitions to revive under 37 CFR 1.137(a) or (b), or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.